INDEX TO AUTHORS

A

Adams, Elijah. L-Histidinal, a biosynthetic precursor of histidine, 325
—. Synthesis and properties of an α-amino aldehyde, histidinal, 317
Ajl, Samuel J. See *Wheat and Ajl*, 897, 909
Allen, Frank Worthington. See *Davis and Allen*, 13
Alonzo, Nicholas. See *Rapport and Alonzo*, 193, 199
Anderson, Laurens. See *Halliday and Anderson*, 797
Arnon, Daniel I. See *Rosenberg and Arnon*, 361
Axelrod, Bernard. See *Seegmiller, Axelrod, and McCready*, 765

B

Bandurski, Robert S. Further studies on the enzymatic synthesis of oxalacetate from phosphorylenolpyruvate and carbon dioxide, 137
Barker, H. A. See *Wachsman and Barker*, 695
Bella, S. Theodore. See *Tallan, Bella, Stein, and Moore*, 703
Berenson, Gerald S. See *Newman, Berenson, Mathews, Goldwasser, and Dorfman*, 31
Bielinski, T. C. See *Boxer, Shonk, Stoerk, Bielinski, and Budzilovich*, 541
Binkley, Francis, and **Boyd, Muriel.** Catalytic cleavage of thioamino acids, 67
Block, Walter D., and **Johnson, Doris V.** Studies of the enzymes of purine metabolism in skin. I. Guanase activity of rat skin, 43
Boxer, George E., Shonk, C. E., Stoerk, Herbert C., Bielinski, T. C., and **Budzilovich, T. V.** Pantoylaminoethanethiol, an antagonist of pantothenic acid and pantetheine active *in vitro* and in the rat, 541
Boyd, Muriel. See *Binkley and Boyd*, 67
Brady, Roscoe O. Fluoroacetyl coenzyme A, 213
Bregoff, Herta M., and **Delwiche, C. C.** The formation of choline and betaine in leaf disks of *Beta vulgaris*, 819
Brown, James R. See *Radin, Lavin, and Brown*, 789
Brown, R. R. See *Walters, Brown, Kaihara, and Price*, 489
Bruemmer, J. H. See *O'Dell, Gordon, Bruemmer, and Hogan*, 625
Buchanan, John M. See *Korn and Buchanan*, 183
—. See *Korn, Remy, Wasilejko, and Buchanan*, 875
—. See *Remy, Remy, and Buchanan*, 885
Budzilovich, T. V. See *Boxer, Shonk, Stoerk, Bielinski, and Budzilovich*, 541

C

Camien, Merrill N., and **Dunn, Max S.** Utilization of L- and D-glutamic acids and L-glutamine by aspartic acid-resistant strains of *Lactobacillus arabinosus*, 125
Campbell, L. Leon, Jr. The oxidative degradation of glycine by a *Pseudomonas*, 669
Castor, LaRoy N., and **Chance, Britton.** Photochemical action spectra of carbon monoxide-inhibited respiration, 453
Chance, Britton, and **Williams, G. R.** Respiratory enzymes in oxidative phosphorylation. I. Kinetics of oxygen utilization, 383
— and —. II. Difference spectra, 395
— and —. III. The steady state, 409
— and —. IV. The respiratory chain, 429

Chance, Britton, Williams, G. R., Holmes, William F., and Higgins, Joseph. Respiratory enzymes in oxidative phosphorylation. V. A mechanism for oxidative phosphorylation, 439

—. See *Castor and Chance*, 453

Chen, Chiadao, Voegtli, Sylvia M., and Freeman, Smith. Estimation of total free reducing plasma steroids, 709

Chernick, Sidney S., Moe, Janet G., Rodnan, Gerald P., and Schwarz, Klaus. A metabolic lesion in dietary necrotic liver degeneration, 829

—. See *Rosecan, Rodnan, Chernick, and Schwarz*, 967

Corey, Harold. See *Saifer and Corey*, 23

D

Darby, William J. See *van Eys, Touster, and Darby*, 287

Davis, Frank F., and Allen, Frank Worthington. The action of ribonuclease on synthetic substrates, 13

Day, Paul L. See *Dinning, Sime, and Day*, 205

Delwiche, C. C. See *Bregoff and Delwiche*, 819

Dinning, James S., Sime, John T., and Day, Paul L. The influence of vitamin E deficiency on the metabolism of sodium formate-C^{14} and glycine-1-C^{14} by the rabbit, 205

Doisy, Edward A. See *Doyle, Katzman, and Doisy*, 921

Doisy, Richard J., Richert, Dan A., and Westerfeld, W. W. Comparative studies of various inhibitors on xanthine oxidase and related enzymes, 307

—. See *Remy, Richert, Doisy, Wells, and Westerfeld*, 293

Dolphin, John L., and Frieden, Earl. Biochemistry of amphibian metamorphosis. II. Arginase activity, 735

Dorfman, Albert. See *Newman, Berenson, Mathews, Goldwasser, and Dorfman*, 31

Doudoroff, Michael. See *Weimberg and Doudoroff*, 607

Dowdy, A. See *Luetscher, Dowdy, Harvey, Neher, and Wettstein*, 505

Doyle, Miles L., Katzman, Philip A., and Doisy, Edward A. Production and properties of bacterial β-glucuronidase, 921

Dreyer, William J., and Neurath, Hans. The activation of chymotrypsinogen. Isolation and identification of a peptide liberated during activation, 527

Dunn, Max S. See *Camien and Dunn*, 125

E

Earl, Joan M. See *Gibbs, Earl, and Ritchie*, 161

Elvehjem, C. A. See *Hayman, Shahinian, Williams, and Elvehjem*, 225

van Eys, Jan, Touster, Oscar, and Darby, William J. The purification of a glucuronide of nicotinic acid from rat urine, 287

F

Figen, Janie F. See *Schmid, Figen, and Schwartz*, 263

Forker, Bluebell Reade, and Morgan, Agnes Fay. Cause of pituitary-adrenal failure in the riboflavin-deficient rat, 659

Fraenkel-Conrat, Heinz. The reaction of tobacco mosaic virus with iodine, 373

Freeman, Smith. See *Chen, Voegtli, and Freeman*, 709

Frieden, Earl. See *Dolphin and Frieden*, 735

Frisell, Wilhelm R., and Mackenzie, Cosmo G. The binding sites of sarcosine oxidase, 275

G

Gamble, James L., Jr., and Najjar, Victor A. Studies of the kinetics of the reverse reaction of yeast hexokinase, 595

Geyer, R. P. See *Lyon, Geyer, and Marshall*, 757

Gibbs, Martin, Earl, Joan M., and Ritchie, Jean L. Metabolism of ribose-1-C^{14} by cell-free extracts of yeast, 161

Goldwasser, Eugene. See *Newman, Berenson, Mathews, Goldwasser, and Dorfman*, 31

Goodman, Albert, Weil, Roger M., and **Stern, Kurt G.** On the mechanism of dextran formation. Chromatographic studies with C^{14}-labeled sugars, 977

Gordon, J. S. See *O'Dell, Gordon, Bruemmer, and Hogan*, 625

Green, D. E., Mii, S., and **Kohout, P. M.** Studies on the terminal electron transport system. I. Succinic dehydrogenase, 551

Gross, Dale, and **Tarver, Harold.** Studies on ethionine. IV. The incorporation of ethionine into the proteins of *Tetrahymena*, 169

Gross, Jerome. See *Littlefield, Keller, Gross, and Zamecnik*, 111

György, Paul. See *Zilliken, Smith, Rose, and György*, 79

H

Halliday, June W., and **Anderson, Laurens.** The synthesis of *myo*-inositol in the rat, 797

Halsey, Yadviga Dowmont, and **Neurath, Hans.** The terminal carboxyl groups of denatured yeast triosephosphate dehydrogenase, 247

Harvey, J. See *Luetscher, Dowdy, Harvey, Neher, and Wettstein*, 505

Hayman, Selma, Shahinian, S. S., Williams, J. N., Jr., and **Elvehjem, C. A.** Effect of 3-acetylpyridine on pyridine nucleotide formation from tryptophan and niacin, 225

Henis, Dov B. See *Hofmann, Hsiao, Henis, and Panos*, 49

Higgins, Joseph. See *Chance, Williams, Holmes, and Higgins*, 439

Hofmann, Klaus, Hsiao, Chao-Ying Yuan, Henis, Dov B., and **Panos, Charles.** The estimation of the fatty acid composition of bacterial lipides, 49

Hogan, A. G. See *O'Dell, Gordon, Bruemmer, and Hogan*, 625

Holmes, William F. See *Chance, Williams, Holmes, and Higgins*, 439

Hsiao, Chao-Ying Yuan. See *Hofmann, Hsiao, Henis, and Panos*, 49

Huffman, Max N., Lott, Mary Harriet, and **Tillotson, Albert.** 16-Substituted steroids. XIV. A new synthetic route to Δ^{16}-steroids, 103

—, —, and —. XV. A new synthetic method for 16-ketosteroids, 107

Hurwitz, Jerard. Enzymatic phosphorylation of vitamin B_6 analogues and their effect on tyrosine decarboxylase, 513

I

Ikawa, Miyoshi. See *Snell, Radin, and Ikawa*, 803

J

Johnson, Doris V. See *Block and Johnson*, 43

Johnson, Mary Perrine. See *Webster and Johnson*, 641

K

Kaihara, Masako. See *Walters, Brown, Kaihara, and Price*, 489

Katzman, Philip A. See *Doyle, Katzman, and Doisy*, 921

Keller, Elizabeth B. See *Littlefield, Keller, Gross, and Zamecnik*, 111

Kihara, Hayato, Prescott, J. M., and **Snell, Esmond E.** The bacterial cleavage of canavanine to homoserine and guanidine, 497

Kimmel, J. R., Thompson, E. O. P., and **Smith, Emil L.** Crystalline papain. V. Cysteic acid and cysteic acid peptides from oxidized papain, 151

Koch, Arthur L. The kinetics of glycine incorporation by *Escherichia coli*, 931

— and **Levy, H. Richard.** Protein turnover in growing cultures of *Escherichia coli*, 947

Kohout, P. M. See *Green, Mii, and Kohout*, 551

Korn, Edward D., and **Buchanan, John M.** Biosynthesis of the purines. VI. Purification of liver nucleoside phosphorylase and demonstration of nu-

cleoside synthesis from 4-amino-5-imidazolecarboxamide, adenine, and 2,6-diaminopurine, 183

Korn, Edward D., Remy, Charles N., Wasilejko, Haline C., and **Buchanan, John M.** Biosynthesis of the purines. VII. Synthesis of nucleotides from bases by partially purified enzymes, 875

L

La Du, Bert N., and **Zannoni, Vincent G.** The tyrosine oxidation system of liver. II. Oxidation of *p*-hydroxyphenylpyruvic acid to homogentisic acid, 777

Lambert, G. Frederick. See *Rose, Wixom, Lockhart, and Lambert,* 987

Lavin, Frances B. See *Radin, Lavin, and Brown,* 789

Leloir, Luis F. See *Reissig, Strominger, and Leloir,* 959

Levy, Anthony L., and **Li, Choh Hao.** Identification of *N*-terminal residues of hypophyseal growth hormone by the phenylthiocarbamyl method, 355

Levy, H. Richard. See *Koch and Levy,* 947

Li, Choh Hao. See *Levy and Li,* 355

Littlefield, John W., Keller, Elizabeth B., Gross, Jerome, and **Zamecnik, Paul C.** Studies on cytoplasmic ribonucleoprotein particles from the liver of the rat, 111

Lockhart, Haines B. See *Rose, Wixom, Lockhart, and Lambert,* 987

Lott, Mary Harriet. See *Huffman, Lott, and Tillotson,* 103, 107

Luetscher, J. A., Jr., Dowdy, A., Harvey, J., Neher, R., and **Wettstein, A.** Isolation of crystalline aldosterone from the urine of a child with the nephrotic syndrome, 505

Lyon, I., Geyer, R. P., and **Marshall, Linda D.** Further studies in fatty acid metabolism and hepatic lipogenesis, 757

M

Mackenzie, Cosmo G. See *Frisell and Mackenzie,* 275

Marinetti, G. V., and **Stotz, Elmer.** Oxidation effects of phospholipides in rat liver systems, 745

Marshall, Linda D. See *Lyon, Geyer, and Marshall,* 757

Mathews, Martin B. See *Newman, Berenson, Mathews, Goldwasser, and Dorfman,* 31

McCready, R. M. See *Seegmiller, Axelrod, and McCready,* 765

McIntyre, Russell T. See *Williams and McIntyre,* 467

Melchior, Jacklyn B. See *Ziegler and Melchior,* 569

Mii, S. See *Green, Mii, and Kohout,* 551

Miller, Ruth. See *Narahara, Tomizawa, Miller, and Williams,* 675

Moe, Janet G. See *Chernick, Moe, Rodnan, and Schwarz,* 829

Moore, Stanford. See *Tallan, Bella, Stein, and Moore,* 703

Morgan, Agnes Fay. See *Forker and Morgan,* 659

N

Najjar, Victor A. See *Gamble and Najjar,* 595

Narahara, H. T., Tomizawa, Henry H., Miller, Ruth, and **Williams, Robert H.** Intracellular distribution of an insulin-inactivating system of liver, 675

Naschke, Mary Dell. See *Seaman and Naschke,* 1

Neher, R. See *Luetscher, Dowdy, Harvey, Neher, and Wettstein,* 505

Neurath, Hans. See *Dreyer and Neurath,* 527

—. See *Halsey and Neurath,* 247

—. See *Vallee and Neurath,* 253

Newman, Joyce K., Berenson, Gerald S., Mathews, Martin B., Goldwasser, Eugene, and **Dorfman, Albert.** The isolation of the non-specific hyaluronidase inhibitor of human blood, 31

O

O'Dell, B. L., Gordon, J. S., Bruemmer, J. H., and **Hogan, A. G.** Effect of a vitamin B_{12} deficiency and of fasting on oxidative enzymes in the rat, 625

P

Panos, Charles. See *Hofmann, Hsiao, Henis, and Panos*, 49

Plaut, G. W. E. An inosinediphosphatase from mammalian liver, 235

Podolsky, Richard J., and **Sturtevant, Julian M.** The enthalpy change on adenosine triphosphate hydrolysis. I, 603

Popenoe, Edwin A. Characterization of a glycoprotein in the urine of patients with proteinuria, 61

Prescott, J. M. See *Kihara, Prescott, and Snell*, 497

Price, J. M. See *Walters, Brown, Kaihara, and Price*, 489

R

Racker, E. Glutathione reductase from bakers' yeast and beef liver, 855

—. Glutathione-homocystine transhydrogenase, 867

Radin, Norman S., Lavin, Frances B., and **Brown, James R.** Determination of cerebrosides, 789

—. See *Snell, Radin, and Ikawa*, 803

Rapport, Maurice M., and **Alonzo, Nicholas.** Identification of phosphatidal choline as the major constituent of beef heart lecithin, 199

— and —. Photometric determination of fatty acid ester groups in phospholipides, 193

Reissig, José L., Strominger, Jack L., and **Leloir, Luis F.** A modified colorimetric method for the estimation of *N*-acetylamino sugars, 959

Remy, Charles N., Remy, Wanda Taylor, and **Buchanan, John M.** Biosynthesis of the purines. VIII. Enzymatic synthesis and utilization of α-5-phosphoribosylpyrophosphate, 885

—, **Richert, Dan A., Doisy, Richard J., Wells, Ibert C.,** and **Westerfeld, W. W.** Purification and characterization of chicken liver xanthine dehydrogenase, 293

—. See *Korn, Remy, Wasilejko, and Buchanan*, 875

Remy, Wanda Taylor. See *Remy, Remy, and Buchanan*, 885

Richert, Dan A. See *Doisy, Richert, and Westerfeld*, 307

—. See *Remy, Richert, Doisy, Wells, and Westerfeld*, 293

Ritchie, Jean L. See *Gibbs, Earl, and Ritchie*, 161

Rodnan, Gerald P. See *Chernick, Moe, Rodnan, and Schwarz*, 829

—. See *Rosecan, Rodnan, Chernick, and Schwarz*, 967

Rose, Catharine S. See *Zilliken, Smith, Rose, and György*, 79

Rose, William C., and **Wixom, Robert L.** The amino acid requirements of man. XIV. The sparing effect of tyrosine on the phenylalanine requirement, 95

— and —. XVI. The rôle of the nitrogen intake, 997

—. —, **Lockhart, Haines B.,** and **Lambert, G. Frederick.** The amino acid requirements of man. XV. The valine requirement; summary and final observations, 987

Rosecan, Marvin, Rodnan, Gerald P., Chernick, Sidney S., and **Schwarz, Klaus.** Acetate-2-C^{14} utilization in dietary necrotic liver degeneration, 967

Rosenberg, Lawson L., and **Arnon, Daniel I.** The preparation and properties of a new glyceraldehyde-3-phosphate dehydrogenase from photosynthetic tissues, 361

S

Saifer, Abraham, and **Corey, Harold.** Electrophoretic mobility-ionic strength studies of proteins. II. Species differentiation of cross-reacting albumins, 23

San Pietro, Anthony. Base-catalyzed deuterium exchange with diphosphopyridine nucleotide, 589

—. On the structure of the diphosphopyridine nucleotide-cyanide complex, 579

Schmid, Rudi, Figen, Janie F., and **Schwartz, Samuel.** Experimental porphyria. IV. Studies of liver catalase and other heme enzymes in Sedormid porphyria, 263

Schwartz, Samuel. See *Schmid, Figen, and Schwartz,* 263
Schwarz, Klaus. See *Chernick, Moe, Rodnan, and Schwarz,* 829
—. See *Rosecan, Rodnan, Chernick, and Schwarz,* 967
Seaman, Gerald R., and **Naschke, Mary Dell.** Reversible cleavage of succinate by extracts of *Tetrahymena,* 1
Seegmiller, C. G., Axelrod, Bernard, and **McCready, R. M.** Conversion of glucose-1-C^{14} to pectin in the boysenberry, 765
Sethna, Shirley S. See *Tsao, Sethna, Sloan, and Wyngarden,* 479
Shahinian, S. S. See *Hayman, Shahinian, Williams, and Elvehjem,* 225
Shonk, C. E. See *Boxer, Shonk, Stoerk, Bielinski, and Budzilovich,* 541
Sime, John T. See *Dinning, Sime, and Day,* 205
Sloan, Charles H. See *Tsao, Sethna, Sloan, and Wyngarden,* 479
Smith, Donald G., and **Young, E. Gordon.** The combined amino acids in several species of marine algae, 845
Smith, Emil L. See *Kimmel, Thompson, and Smith,* 151
Smith, Phyllis N. See *Zilliken, Smith, Rose, and György,* 79
Snell, Esmond E., Radin, Norman S., and **Ikawa, Miyoshi.** The nature of D-alanine in lactic acid bacteria, 803
—. See *Kihara, Prescott, and Snell,* 497
Stein, William H. See *Tallan, Bella, Stein, and Moore,* 703
Stern, Kurt G. See *Goodman, Weil, and Stern,* 977
Stoerk, Herbert C. See *Boxer, Shonk, Stoerk, Bielinski, and Budzilovich,* 541
Stotz, Elmer. See *Marinetti and Stotz,* 745
Strominger, Jack L. See *Reissig, Strominger, and Leloir,* 959
Sturtevant, Julian M. See *Podolsky and Sturtevant,* 603

T

Tallan, Harris H., Bella, S. Theodore, Stein, William H., and **Moore, Stanford.** Tyrosine-*O*-sulfate as a constituent of normal human urine, 703
Tappel, A. L. Unsaturated lipide oxidation catalyzed by hematin compounds, 721
Tarver, Harold. See *Gross and Tarver,* 169
Thompson, E. O. P. See *Kimmel, Thompson, and Smith,* 151
Tillotson, Albert. See *Huffman, Lott, and Tillotson,* 103, 107
Tisdale, Howard. See *Green, Mii, and Kohout,* 551
Tomizawa, Henry H., and **Williams, Robert H.** Studies on the specificity of an insulin-inactivating system of the liver, 685
—. See *Narahara, Tomizawa, Miller, and Williams,* 675
Touster, Oscar. See *van Eys, Touster, and Darby,* 287
Tsao, Makepeace U., Sethna, Shirley S., Sloan, Charles H., and **Wyngarden, Lillian J.** Spectrophotometric determination of the oxygen saturation of whole blood, 479
Tulpule, P. G., and **Williams, J. N., Jr.** Study of the rôle of essential fatty acids in liver metabolism, 229

V

Vallee, Bert L., and **Neurath, Hans.** Carboxypeptidase, a zinc metalloenzyme, 253
Varga, Laszlo. Studies on hyaluronic acid prepared from the vitreous body, 651
Vickery, Hubert Bradford. The metabolism of the organic acids of tobacco leaves. IX. Effect of culture of excised leaves in solutions of oxalate and succinate in the presence of cyanide, 83
Voegtli, Sylvia M. See *Chen, Voegtli, and Freeman,* 709

W

Wachsman, J. T., and **Barker, H. A.** Tracer experiments on glutamate fermentation by *Clostridium tetanomorphum*, 695

Walters, C. J., Brown, R. R., Kaihara, Masako, and **Price, J. M.** The excretion of *N*-methyl-2-pyridone-5-carboxamide by man following ingestion of several known or potential precursors, 489

Wasilejko, Haline C. See *Korn, Remy, Wasilejko, and Buchanan*, 875

Webster, George C., and **Johnson, Mary Perrine.** Effects of ribonucleic acid on amino acid incorporation by a particulate preparation from pea seedlings, 641

Weil, Roger M. See *Goodman, Weil, and Stern*, 977

Weimberg, R., and **Doudoroff, Michael.** The oxidation of L-arabinose by *Pseudomonas saccharophila*, 607

Wells, Ibert C. Antimetabolites of choline. Studies in young rats, 631

—. See *Remy, Richert, Doisy, Wells, and Westerfeld*, 293

Westerfeld, W. W. See *Doisy, Richert, and Westerfeld*, 307

—. See *Remy, Richert, Doisy, Wells, and Westerfeld*, 293

Wettstein, A. See *Luetscher, Dowdy, Harvey, Neher, and Wettstein*, 505

Wheat, Robert W., and **Ajl, Samuel J.** Citritase, the citrate-splitting enzyme from *Escherichia coli*. I. Purification and properties, 897

— and —. II. Reaction mechanisms, 909

Williams, G. R. See *Chance and Williams*, 383, 395, 409, 429

Williams, G. R. See *Chance, Williams, Holmes, and Higgins*, 439

Williams, J. N., Jr. See *Hayman, Shahinian, Williams, and Elvehjem*, 225

—. See *Tulpule and Williams*, 229

Williams, Robert H. See *Narahara, Tomizawa, Miller, and Williams*, 675

—. See *Tomizawa and Williams*, 685

Williams, Virginia R., and **McIntyre, Russell T.** Preparation and partial purification of the aspartase of *Bacterium cadaveris*, 467

Wixom, Robert L. See *Rose and Wixom*, 95, 997

—. See *Rose, Wixom, Lockhart, and Lambert*, 987

Wyngarden, Lillian J. See *Tsao, Sethna, Sloan, and Wyngarden*, 479

Y

Yanofsky, Charles. An isotopic study of the conversion of anthranilic acid to indole, 345

Young, E. Gordon. See *Smith and Young*, 845

Z

Zamecnik, Paul C. See *Littlefield, Keller, Gross, and Zamecnik*, 111

Zannoni, Vincent G. See *La Du and Zannoni*, 777

Ziegler, Daniel M., and **Melchior, Jacklyn B.** Activation of the amino acid-incorporating system of rat liver slices upon incubation, 569

Zilliken, Friedrich, Smith, Phyllis N., Rose, Catharine S., and **György, Paul.** Synthesis of 4-*O*-β-D-galactopyranosyl-*N*-acetyl-D-glucosamine by intact cells of *Lactobacillus bifidus* var. *pennsylvanicus*, 79

INDEX TO SUBJECTS

A

Acetate: Carbon 14-labeled, utilization, liver necrosis, dietary, *Rosecan, Rodnan, Chernick, and Schwarz,* 967

Acetylpyridine: 3-, pyridine nucleotide formation, relation, *Hayman, Shahinian, Williams, and Elvehjem,* 225

Adenine: Nucleoside synthesis, relation, *Korn and Buchanan,* 183

Adenosine triphosphate: Hydrolysis, enthalpy, *Podolsky and Sturtevant,* 603

Adrenal: Pituitary-, failure, riboflavin deficiency, *Forker and Morgan,* 659

Alanine: D-, lactic acid bacteria, *Snell, Radin, and Ikawa,* 803

Albumin(s): Cross-reacting, species differentiation, *Saifer and Corey,* 23

Aldosterone: Urine, nephrotic, *Luetscher, Dowdy, Harvey, Neher, and Wettstein,* 505

Alga: Marine, amino acids, *Smith and Young,* 845

Amino acid(s): Algae, marine, *Smith and Young,* 845

-Incorporating system, liver, *Ziegler and Melchior,* 569

Incorporation, pea seedlings, ribonucleic acid effects, *Webster and Johnson,* 641

Requirements, *Rose and Wixom,* 95

Rose, Wixom, Lockhart, and Lambert, 987

—, nitrogen intake rôle, *Rose and Wixom,* 997

Thio-. *See* Thioamino acid

Amino-5-imidazolecarboxamide: 4-, nucleoside synthesis, relation, *Korn and Buchanan,* 183

Anthranilic acid: Indole from, isotopic study, *Yanofsky,* 345

Antimetabolite(s): Choline, *Wells,* 631

Arabinose: L-, oxidation, *Pseudomonas saccharophila, Weimberg and Doudoroff,* 607

Arginase: Metamorphosis, amphibian, *Dolphin and Frieden,* 735

Aspartase: *Bacterium cadaveris, Williams and McIntyre,* 467

Aspartic acid: -Resistant *Lactobacillus arabinosus,* L- and D-glutamic acids and L-glutamine, utilization, *Camien and Dunn,* 125

B

Bacillus: *See also Lactobacillus*

Bacteria: Canavanine cleavage to homoserine and guanidine, effect, *Kihara, Prescott, and Snell,* 497

β-Glucuronidase, *Doyle, Katzman, and Doisy,* 921

Lactic acid, D-alanine, *Snell, Radin, and Ikawa,* 803

Lipide fatty acid, determination, *Hofmann, Hsiao, Henis, and Panos,* 49

See also Clostridium, Escherichia, Pseudomonas

Bacterium cadaveris: Aspartase, *Williams and McIntyre,* 467

Betaine: Formation, *Beta vulgaris* leaf disks, *Bregoff and Delwiche,* 819

Beta vulgaris: Leaf disks, choline and betaine formation, *Bregoff and Delwiche,* 819

Blood: Hyaluronidase inhibitor, isolation, *Newman, Berenson, Mathews, Goldwasser, and Dorfman,* 31

Oxygen saturation, determination, spectrophotometric, *Tsao, Sethna, Sloan, and Wyngarden,* 479

Blood plasma: Steroids, total free reducing, determination, *Chen, Voegtli, and Freeman,* 709

Boysenberry: Glucose-1-C^{14} conversion to pectin, *Seegmiller, Axelrod, and McCready,* 765

XUM

C

Canavanine: Guanidine from, bacterial effect, *Kihara, Prescott, and Snell,* 497
Homoserine from, bacterial effect, *Kihara, Prescott, and Snell,* 497
Carbon dioxide: Oxalacetate synthesis, enzymatic, relation, *Bandurski,* 137
Carbon monoxide: -Inhibited respiration, spectra, *Castor and Chance,* 453
Carboxamide: 4-Amino-5-imidazole-. *See* Amino-5-imidazolecarboxamide
Methyl-2-pyridone-5-. *See* Methyl-2-pyridone-5-carboxamide
Carboxyl group(s): Terminal, yeast triosephosphate dehydrogenase, *Halsey and Neurath,* 247
Carboxypeptidase: *Vallee and Neurath,* 253
Catalase: Liver, porphyria, Sedormid, *Schmid, Figen, and Schwartz,* 263
Cerebroside(s): Determination, *Radin, Lavin, and Brown,* 789
Chicken: Liver xanthine dehydrogenase, *Remy, Richert, Doisy, Wells, and Westerfeld,* 293
Choline: Antimetabolites, *Wells,* 631
Formation, *Beta vulgaris* leaf disks, *Bregoff and Delwiche,* 819
Phosphatidal. *See* Phosphatidal choline
Chymotrypsinogen: Activation, peptide from, *Dreyer and Neurath,* 527
Citritase: *Escherichia coli,* purification and properties, *Wheat and Ajl,* 897
— —, reaction mechanisms, *Wheat and Ajl,* 909
Clostridium tetanomorphum: Glutamate fermentation, tracer experiments, *Wachsman and Barker,* 695
Coenzyme: A, fluoroacetyl. *See* Fluoroacetyl coenzyme
Cyanide: Diphosphopyridine nucleotide-, complex, chemical constitution, *San Pietro,* 579
Tobacco leaf culture, oxalate, succinate and, effect, *Vickery,* 83
Cysteic acid: Papain, *Kimmel, Thompson, and Smith,* 151
Cysteic acid peptide(s): Papain, *Kimmel, Thompson, and Smith,* 151

D

Decarboxylase: Tyrosine. *See* Tyrosine decarboxylase
Dehydrogenase: Glyceraldehyde-3-phosphate. *See* Glyceraldehyde-3-phosphate dehydrogenase
Succinic. *See* Succinic dehydrogenase
Triosephosphate. *See* Triosephosphate dehydrogenase
Xanthine. *See* Xanthine dehydrogenase
Deuterium: Exchange, diphosphopyridine nucleotide effect, *San Pietro,* 589
Dextran: Formation, mechanism, *Goodman, Weil, and Stern,* 977
Diaminopurine: 2,6-, nucleoside synthesis, relation, *Korn and Buchanan,* 183
Diphosphopyridine nucleotide: -Cyanide complex, chemical constitution, *San Pietro,* 579
Deuterium exchange, effect, *San Pietro,* 589

E

Electron transport: System, terminal, *Green, Mii, and Kohout,* 551
Enzyme(s): Heme, porphyria, Sedormid, *Schmid, Figen, and Schwartz,* 263
Metallo-. *See* Metalloenzyme
Nucleotide synthesis, *Korn, Remy, Wasilejko, and Buchanan,* 875
Oxalacetate synthesis, phosphorylenolpyruvate and carbon dioxide relation, *Bandurski,* 137
Oxidative, vitamin B_{12} and fasting, effect, *O'Dell, Gordon, Bruemmer, and Hogan,* 625
Phosphorylation, vitamin B_6 analogues, tyrosine decarboxylase, effect, *Hurwitz,* 513
Respiratory. *See* Respiratory enzyme

Enzyme(s)—*continued:*
Skin purine metabolism, *Block and Johnson*, 43
See also Arginase, Aspartase, etc.
Escherichia coli: Citritase, purification and properties, *Wheat and Ajl*, 897
—, reaction mechanisms, *Wheat and Ajl*, 909
Cultures, protein turnover, *Koch and Levy*, 947
Glycine incorporation, kinetics, *Koch*, 931
Ethanethiol: Pantoylamino-. *See* Pantoylaminoethanethiol
Ethionine: Incorporation, proteins, *Tetrahymena, Gross and Tarver*, 169

F

Fasting: Enzymes, oxidative, effect, *O'Dell, Gordon, Bruemmer, and Hogan*, 625
Fatty acid(s): Bacterial lipides, determination, *Hofmann, Hsiao, Henis, and Panos*, 49
Essential, liver metabolism, rôle, *Tulpule and Williams*, 229
Ester groups, phospholipides, determination, photometric, *Rapport and Alonzo*, 193
Metabolism, lipogenesis, hepatic, *Lyon, Geyer, and Marshall*, 757
Fluoroacetyl coenzyme: A, *Brady*, 213

G

Galactopyranosyl-N-acetyl-D-glucosamine: 4-*O*-β-D-, synthesis, *Lactobacillus bifidus, Zilliken, Smith, Rose, and György*, 79
Glucosamine: 4-*O*-β-D-Galactopyranosyl-*N*-acetyl-D-. *See* Galactopyranosyl-*N*-acetyl-D-glucosamine
Glucose: Carbon 14-labeled, pectin from, boysenberry, *Seegmiller, Axelrod, and McCready*, 765
Glucuronidase: β-, bacteria, *Doyle, Katzman, and Doisy*, 921
Glucuronide: Nicotinic acid. *See* Nicotinic acid glucuronide
Glutamate: Fermentation, *Clostridium tetanomorphum*, tracer experiments, *Wachsman and Barker*, 695
Glutamic acid: D-, utilization, *Lactobacillus arabinosus*, aspartic acid-resistant, *Camien and Dunn*, 125
L-, utilization, *Lactobacillus arabinosus*, aspartic acid-resistant, *Camien and Dunn*, 125
Glutamine: L-, utilization, *Lactobacillus arabinosus*, aspartic acid-resistant, *Camien and Dunn*, 125
Glutathione-homocystine transhydrogenase: *Racker*, 867
Glutathione reductase: Liver, *Racker*, 855
Yeast, *Racker*, 855
Glyceraldehyde-3-phosphate dehydrogenase: Tissues, photosynthetic, *Rosenberg and Arnon*, 361
Glycine: Carbon 14-labeled, metabolism, vitamin E effect, *Dinning, Sime, and Day*, 205
Degradation, oxidative, *Pseudomonas, Campbell*, 669
Incorporation, *Escherichia coli*, kinetics, *Koch*, 931
Glycoprotein: Urine, proteinuria, *Popenoe*, 61
Growth: Hormone, hypophysis, nitrogen-terminal residues, *Levy and Li*, 355
Guanase: Skin, *Block and Johnson*, 43
Guanidine: Canavanine cleavage to, bacterial effect, *Kihara, Prescott, and Snell*, 497

H

Heart: Lecithin phosphatidal choline, *Rapport and Alonzo*, 199
Hematin compound(s): Lipide, unsaturated, oxidation, effect, *Tappel*, 721
Heme: Enzymes, porphyria, Sedormid, *Schmid, Figen, and Schwartz*, 263
Hexokinase: Yeast, reverse reaction kinetics, *Gamble and Najjar*, 595
Histidinal: L-, histidine biosynthesis relation, *Adams*, 325
Synthesis and properties, *Adams*, 317

Histidine: Biosynthesis, L-histidinal relation, *Adams*, 325
Homogentisic acid: *p*-Hydroxyphenylpyruvic acid oxidation to, liver, *La Du and Zannoni*, 777
Homoserine: Canavanine cleavage to, bacterial effect, *Kihara, Prescott, and Snell*, 497
Hyaluronic acid: Vitreous body, *Varga*, 651
Hyaluronidase: Inhibitor, blood, isolation, *Newman, Berenson, Mathews, Goldwasser, and Dorfman*, 31
Hydrogenase: Glutathione-homocystine trans-. *See* Glutathione-homocystine transhydrogenase
Hydroxyphenylpyruvic acid: *p*-, oxidation to homogentisic acid, liver, *La Du and Zannoni*, 777
Hypophysis: *See* Pituitary

I

Indole: Anthranilic acid conversion to, isotopic study, *Yanofsky*, 345
Inosinediphosphatase: Liver, *Plaut*, 235
Inositol: *myo-*, synthesis, *in vivo*, *Halliday and Anderson*, 797
Insulin: -Inactivating system, liver, *Narahara, Tomizawa, Miller, and Williams*, 675
Tomizawa and Williams, 685

K

Ketosteroid(s): 16-, synthesis, *Huffman, Lott, and Tillotson*, 107
Kinase: Hexo-. *See* Hexokinase

L

Lactic acid: Bacteria, D-alanine, *Snell, Radin, and Ikawa*, 803
Lactobacillus arabinosus: Aspartic acid-resistant, L- and D-glutamic acids and L-glutamine, utilization, *Camien and Dunn*, 125
Lactobacillus bifidus: 4-*O*-β-D-Galactopyranosyl-*N*-acetyl-D-glucosamine synthesis, *Zilliken, Smith, Rose, and György*, 79
Lecithin: Heart, phosphatidal choline, *Rapport and Alonzo*, 199
Lipide(s): Bacteria, fatty acid determination, *Hofmann, Hsiao, Henis, and Panos*, 49
Phospho-. *See* Phospholipide
Unsaturated, oxidation, hematin compounds, effect, *Tappel*, 721
Lipogenesis: Hepatic, fatty acid metabolism, *Lyon, Geyer, and Marshall*, 757
Liver: Amino acid-incorporating system, *Ziegler and Melchior*, 569
Catalase, porphyria, Sedormid, *Schmid, Figen, and Schwartz*, 263
Glutathione reductase, *Racker*, 855
p-Hydroxyphenylpyruvic acid oxidation to homogentisic acid, *La Du and Zannoni*, 777
Inosinediphosphatase, *Plaut*, 235
Insulin-inactivating system, *Narahara, Tomizawa, Miller, and Williams*, 675
Tomizawa and Williams, 685
Lipogenesis, fatty acid metabolism, *Lyon, Geyer, and Marshall*, 757
Metabolism, fatty acids, essential, rôle, *Tulpule and Williams*, 229
Necrosis, dietary, acetate-2-C^{14} utilization, *Rosecan, Rodnan, Chernick, and Schwarz*, 967
Necrotic, metabolic lesion, *Chernick, Moe, Rodnan, and Schwarz*, 829
Nucleoside phosphorylase, purification, *Korn and Buchanan*, 183
Phospholipide oxidation effect, *Marinetti and Stotz*, 745
Ribonucleoprotein, *Littlefield, Keller, Gross, and Zamecnik*, 111
Tyrosine oxidation system, *La Du and Zannoni*, 777
Xanthine dehydrogenase, chicken, *Remy, Richert, Doisy, Wells, and Westerfeld*, 293

M

Metabolism: Lesion, liver, necrotic, *Chernick, Moe, Rodnan, and Schwarz*, 829
Metalloenzyme: Zinc, carboxypeptidase relation, *Vallee and Neurath*, 253

Metamorphosis: Amphibian, arginase, *Dolphin and Frieden*, 735
—, biochemistry, *Dolphin and Frieden*, 735
Methyl-2-pyridone-5-carboxamide: *N*-, excretion, *Walters, Brown, Kaihara, and Price*, 489
Mosaic: Tobacco, virus, iodine reaction with, *Fraenkel-Conrat*, 373
Muscle: *See also* Heart

N

Nephrosis: Urine, aldosterone, *Luetscher, Dowdy, Harvey, Neher, and Wettstein*, 505
Niacin: Pyridine nucleotide formation, relation, *Hayman, Shahinian, Williams, and Elvehjem*, 225
Nicotinic acid glucuronide: Urine, *van Eys, Touster, and Darby*, 287
Nitrogen: Intake, amino acid requirements, rôle, *Rose and Wixom*, 997
Nuclease: Ribo-. *See* Ribonuclease
Nucleic acid: Ribo-. *See* Ribonucleic acid
Nucleoside: Synthesis, 4-amino-5-imidazolecarboxamide, adenine, and 2,6-diaminopurine, relation, *Korn and Buchanan*, 183
Nucleoside phosphorylase: Liver, purification, *Korn and Buchanan*, 183
Nucleotide(s): Diphosphopyridine. *See* Diphosphopyridine nucleotide
Pyridine. *See* Pyridine nucleotide
Synthesis, enzymatic, *Korn, Remy, Wasilejko, and Buchanan*, 875

O

Organic acid(s): Tobacco leaves, metabolism, *Vickery*, 83
Oxalacetate: Synthesis, enzymatic, phosphorylenolpyruvate and carbon dioxide relation, *Bandurski*, 137
Oxalate: Tobacco leaf culture, cyanide and, effect, *Vickery*, 83
Oxidase: Sarcosine. *See* Sarcosine oxidase
Xanthine. *See* Xanthine oxidase
Oxygen: Saturation, blood, determination, spectrophotometric, *Tsao, Sethna, Sloan, and Wyngarden*, 479
Utilization, phosphorylation, oxidative, *Chance and Williams*, 383

P

Pantetheine: Pantoylaminoethanethiol, relation, *Boxer, Shonk, Stoerk, Bielinski, and Budzilovich*, 541
Pantothenic acid: Pantoylaminoethanethiol, relation, *Boxer, Shonk, Stoerk, Bielinski, and Budzilovich*, 541
Pantoylaminoethanethiol: Pantothenic acid and pantetheine, relation, *Boxer, Shonk, Stoerk, Bielinski, and Budzilovich*, 541
Papain: Crystalline, *Kimmel, Thompson, and Smith*, 151
Cysteic acid, *Kimmel, Thompson, and Smith*, 151
— — peptides, *Kimmel, Thompson, and Smith*, 151
Pea: Seedlings, amino acid incorporation, ribonucleic acid effects, *Webster and Johnson*, 641
Pectin: Glucose-1-C^{14} conversion to, boysenberry, *Seegmiller, Axelrod, and McCready*, 765
Peptidase: Carboxy-. *See* Carboxypeptidase
Peptide(s): Chymotrypsinogen activation, relation, *Dreyer and Neurath*, 527
Cysteic acid. *See* Cysteic acid peptide
Phenylalanine: Requirement, tyrosine effect, *Rose and Wixom*, 95
Phosphatase: Inosinedi-. *See* Inosinediphosphatase
Phosphatidal choline: Heart lecithin, *Rapport and Alonzo*, 199
Phospholipide(s): Fatty acid ester groups, determination, photometric, *Rapport and Alonzo*, 193
Oxidation, liver, effect, *Marinetti and Stotz*, 745
Phosphoribosylpyrophosphate: α-5-, synthesis, enzymatic, utilization, *Remy, Remy, and Buchanan*, 885

Phosphorylase: Nucleoside. *See* Nucleoside phosphorylase
Phosphorylation: Enzymatic, vitamin B_6 analogues, tyrosine decarboxylase, effect, *Hurwitz*, 513
Oxidative, enzymes, respiratory, *Chance and Williams*, 383, 395, 409, 429
Chance, Williams, Holmes, and Higgins, 439
—, mechanism, *Chance, Williams, Holmes, and Higgins*, 439
—, oxygen utilization, *Chance and Williams*, 383
—, spectra, *Chance and Williams*, 395
Phosphorylenolpyruvate: Oxalacetate synthesis, enzymatic, relation, *Bandurski*, 137
Photosynthesis: Tissue, glyceraldehyde-3-phosphate dehydrogenase, *Rosenberg and Arnon*, 361
Pituitary: -Adrenal failure, riboflavin deficiency, *Forker and Morgan*, 659
Growth hormone, nitrogen-terminal residues, *Levy and Li*, 355
Porphyria: Sedormid, liver catalase and heme enzymes, *Schmid, Figen, and Schwartz*, 263
Protein(s): Glyco-. *See* Glycoprotein
Mobility-ionic strength, electrophoretic, *Saifer and Corey*, 23
Ribonucleo-. *See* Ribonucleoprotein
Tetrahymena, ethionine incorporation, *Gross and Tarver*, 169
Turnover, *Escherichia coli* cultures, *Koch and Levy*, 947
Proteinuria: Urine, glycoprotein, *Popenoe*, 61
Protozoa: *See also Tetrahymena*
Pseudomonas: Glycine degradation, oxidative, *Campbell*, 669
Pseudomonas saccharophila: L-Arabinose oxidation, *Weimberg and Doudoroff*, 607
Purine(s): 2,6-Diamino-. *See* Diaminopurine
Biosynthesis, *Korn and Buchanan*, 183
Korn, Remy, Wasilejko, and Buchanan, 875
Remy, Remy, and Buchanan, 885
Purine(s)—*continued:*
Metabolism enzymes, skin, *Block and Johnson*, 43
Pyridine: Acetyl-. *See* Acetylpyridine
Pyridine nucleotide: Formation, tryptophan, niacin, and 3-acetylpyridine, relation, *Hayman, Shahinian, Williams, and Elvehjem*, 225
Pyruvate: Phosphorylenol-. *See* Phosphorylenolpyruvate
Pyruvic acid: *p*-Hydroxyphenyl-. *See* Hydroxyphenylpyruvic acid

R

Reductase: Glutathione. *See* Glutathione reductase
Respiration: Carbon monoxide-inhibited, spectra, *Castor and Chance*, 453
Respiratory enzyme(s): Phosphorylation, oxidative, *Chance and Williams*, 383, 395, 409, 429
Chance, Williams, Holmes, and Higgins, 439
Riboflavin: Pituitary-adrenal failure, relation, *Forker and Morgan*, 659
Ribonuclease: Substrates, synthetic, action, *Davis and Allen*, 13
Ribonucleic acid: Pea seedling amino acid incorporation, effects, *Webster and Johnson*, 641
Ribonucleoprotein: Liver, *Littlefield, Keller, Gross, and Zamecnik*, 111
Ribose: Carbon 14-labeled, metabolism, yeast, *Gibbs, Earl, and Ritchie*, 161

S

Sarcosine oxidase: Binding sites, *Frisell and Mackenzie*, 275
Sedormid: Porphyria, liver catalase and heme enzymes, *Schmid, Figen, and Schwartz*, 263
Serine: Homo-. *See* Homoserine
Skin: Guanase, *Block and Johnson*, 43
Purine metabolism enzymes, *Block and Johnson*, 43
Sodium formate: Carbon 14-labeled, metabolism, vitamin E effect, *Dinning, Sime, and Day*, 205

Steroid(s): Keto-. *See* Ketosteroid
16-Substituted, *Huffman, Lott, and Tillotson,* 103, 107
Δ^{16}-, synthesis, *Huffman, Lott, and Tillotson,* 103
Total free reducing, blood plasma, determination, *Chen, Voegtli, and Freeman,* 709
Succinate: Cleavage, *Tetrahymena, Seaman and Naschke,* 1
Tobacco leaf culture, cyanide and, effect, *Vickery,* 83
Succinic dehydrogenase: *Green, Mii, and Kohout,* 551
Sugar(s): *N*-Acetylamino, determination, colorimetric, *Reissig, Strominger, and Leloir,* 959

T

Tetrahymena: Proteins, ethionine incorporation, *Gross and Tarver,* 169
Succinate cleavage, *Seaman and Naschke,* 1
Thioamino acid(s): Cleavage, catalytic, *Binkley and Boyd,* 67
Tobacco: Leaves, organic acids, metabolism, *Vickery,* 83
—, oxalate and cyanide solutions, culture effect, *Vickery,* 83
—, succinate and cyanide solutions, culture effect, *Vickery,* 83
Mosaic virus, iodine reaction with, *Fraenkel-Conrat,* 373
Triosephosphate dehydrogenase: Carboxyl groups, terminal, yeast, *Halsey and Neurath,* 247
Trypsinogen: Chymo-. *See* Chymotrypsinogen
Tryptophan: Pyridine nucleotide formation, relation, *Hayman, Shahinian, Williams, and Elvehjem,* 225
Tyrosine: Oxidation system, liver, *La Du and Zannoni,* 777
Phenylalanine requirement, effect, *Rose and Wixom,* 95
Tyrosine decarboxylase: Vitamin B_6 analogues, phosphorylation, enzymatic, effect, *Hurwitz,* 513
Tyrosine-O-sulfate: Urine, *Tallan, Bella, Stein, and Moore,* 703

U

Urine: Glycoprotein, proteinuria, *Popenoe,* 61
Nephrosis, aldosterone, *Luetscher, Dowdy, Harvey, Neher, and Wettstein,* 505
Nicotinic acid glucuronide, *van Eys, Touster, and Darby,* 287
Tyrosine-*O*-sulfate, *Tallan, Bella, Stein, and Moore,* 703

V

Valine: Requirement, *Rose, Wixom, Lockhart, and Lambert,* 987
Virus: Tobacco mosaic, iodine reaction with, *Fraenkel-Conrat,* 373
Vitamin: B_6 analogues, phosphorylation, enzymatic, tyrosine decarboxylase, effect, *Hurwitz,* 513
B_{12}, enzymes, oxidative, effect, *O'Dell, Gordon, Bruemmer, and Hogan,* 625
E, glycine-C^{14} metabolism, effect, *Dinning, Sime, and Day,* 205
—, sodium formate-C^{14} metabolism, effect, *Dinning, Sime, and Day,* 205
Vitreous body: Hyaluronic acid, *Varga,* 651

X

Xanthine dehydrogenase: Liver, chicken, *Remy, Richert, Doisy, Wells, and Westerfeld,* 293
Xanthine oxidase: Inhibitors, *Doisy, Richert, and Westerfeld,* 307

Y

Yeast: Glutathione reductase, *Racker,* 855
Hexokinase reverse reaction kinetics, *Gamble and Najjar,* 595
Ribose-1-C^{14} metabolism, *Gibbs, Earl, and Ritchie,* 161
Triosephosphate dehydrogenase carboxyl groups, terminal, *Halsey and Neurath,* 247

Z

Zinc: Metalloenzyme, carboxypeptidase relation, *Vallee and Neurath,* 253